SECRETARY OF STATE
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State of California

DRAFT STANDARDS

For Use of Accessible Voter Verified Paper Audit Trail Systems in Direct Recording Electronic (DRE) Voting Machines

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Public comment accepted through April 19, 2004. During this 30-day period the public is encouraged to send written comments by any of the following methods:

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State of California Draft Standards
For Use of Accessible Voter Verified Paper Audit Trail Systems
in Direct Recording Electronic (DRE) Voting Machines

These standards have been proposed by the Secretary of State pursuant to Elections Code sections 19100 and 19205 and if adopted shall regulate and govern the use of the Accessible Voter Verified Paper Audit Trail System in Direct Recording Electronic (DRE) Voting Machines in all elections governed by the California Elections Code.

These standards shall be effective beginning July 1, 2005 for all DRE voting machines purchased after that date and beginning July 1, 2006 for all DRE voting machines and shall be used in conjunction with all other statutory and regulatory requirements at the state and federal level. Insofar as feasible, all standards prescribed herein shall be carried out in full view of the public.

These standards constitute a minimum standard of performance. They are not intended to preclude additional steps taken by individual elections officials to enhance the security and reliability of the electoral process.

1. General Description

1.1 Components: The accessible voter verified paper audit trail (AVVPAT) system shall consist of three parts:

1.1.1 An Accessible Voter Verified Paper Audit Trail Writer (AVVPAT-W): A device attached, built into, or used in conjunction with a Direct Recording Electronic (DRE) voting machine.

1.1.1.1 Such a device must minimally consists of:

1.1.1.1.1 Printer: A device that will transfer a voter's choices for contests to create a paper ballot copy.

1.1.1.1.2 A ballot viewer: A device that will allow a voter to view his/her paper ballot image while preventing the voter from directly handling the paper ballot copy.

1.1.2 An Accessible Voter Verified Paper Audit Trail Ballot Storage Unit (AVVPAT-S): A device that stores cast and spoiled paper ballot copies.

1.1.3 An Accessible Voter Verified Paper Audit Trail Reader (AVVPAT-R): The equipment and programs capable of reading, interpreting and summarizing the information contained on the paper ballot copy.

1.1.4 These devices may be integrated as necessary to their operation.

1.2 Operation: AVVPAT systems may be designed in various configurations. In all such devices, upon completion of selecting his or her contest choices on the DRE, the voter shall have the ability to indicate on the machine that he/she is ready to verify his/her ballot. The vote recorder then prints his/her selections on the paper ballot copy. The paper ballot copy is then presented for view in the ballot viewer, where the voter may either accept or reject the choices represented. If the voter accepts the choices, the electronic vote is then recorded in the DRE's electronic storage device (described in separate procedures) and the paper ballot copy is then transferred to the ballot storage unit. If the voter rejects the choices, the paper ballot copy must be spoiled by a method clearly discernable. The voter shall then have the ability to change his/her selections utilizing the DRE before repeating the verification process described above.

2. Design Standards

2.1 General

2.1.1 Recount

2.1.1.1 Every electronic vote recorded must have a corresponding paper ballot copy.

2.1.1.2 The electronic vote shall be considered the official record except as described in 2.1.1.3

2.1.1.3 The paper ballot copy shall be considered the official paper audit record and shall be used for the required 1% manual recount, for any full manual recount, or for any electronic recount of the paper ballot copies.

2.1.1.4 In the case of a discrepancy, the AVVPAT paper ballot copy shall govern, unless there is clear evidence that the paper ballot copy is inaccurate, incomplete or unreadable.

2.1.2 Privacy: The system shall be designed to allow every voter to review, accept or reject his/her ballot privately and independently.

2.1.3 Readability: The system shall be designed to maximize the ease in which the voter may review, accept or reject his/her ballot.

2.1.4 Accessibility: The system shall be designed to allow access for disabled voters to privately and independently use the AVVPAT. This includes but is not limited to curbside voting and additional devices to aid the blind and visually impaired.

2.2 Ballot Copy

2.2.1 Security: Security protections shall be built into the paper audit trail and/or AVVPAT-S in order to ensure the security of the paper ballot copies and prevent tampering.

2.2.2 Readability

2.2.2.1 The paper shall be designed so as to make the paper ballot copy machine-readable by an electronic reader.

2.2.2.2 The paper shall be designed so as to make the paper ballot copy easily readable by voters and election officials.

2.2.3 Capacity: There must be enough paper for printing paper ballot copies sufficient to accommodate all voters using the DRE machines within a precinct. If an AVVPAT-W does not easily accommodate removing and transferring blank unused ballot copy paper among machines, then there must be enough paper so that each DRE could each print paper ballot copies sufficient to accommodate all voters within a precinct.

2.3 Printer

2.3.1 Security: The image created by the printing device shall be designed to withstand storage requirements as outlined in these standards and the California Election Code.

2.3.2 Readability

2.3.2.1 Machine: The image created by the printer shall be designed so as to make the ballot machine-readable by the AVVPAT-R.

2.3.2.2 Human: The image created by the printer shall be designed so as to allow a voter to confirm his/her selections privately and independently.

2.3.3 Printed Information

2.3.3.1 Offices/Measures: The image created by the AVVPAT-W shall include every contest in which the voter was eligible to vote.

2.3.3.2 Selections

2.3.3.2.1 Candidates/Measures: The image created by the AVVPAT-W shall include every valid selection made for each contest as selected by the voter.

2.3.3.2.1.1 Write-in: The image created by the AVVPAT-W shall allow for write-in candidates as mandated.

2.3.3.2.2 Undervote: The image created by the AVVPAT-W shall include information on undervotes made by the voter.

2.3.3.2.2.1 This image shall not replace the requirement that the DRE notify the voter on the electronic screen in the case of any undervote.

2.3.3.2.3 The image created by the AVVPAT-W shall include a distinguishable mark readable to both a person and a machine in the case of a provisional ballot.

2.3.3.2.4 The image created by the AVVPAT-W shall include a distinguishable mark readable to both a person and a machine in the case of a spoiled/rejected ballot. The spoiled paper ballot copy with the distinguishable mark present shall be displayed in the ballot viewer to allow the voter to acknowledge the ballot has been spoiled.

2.3.3.3 Spoiling ballots. The voter shall have the opportunity to affirmatively spoil/reject their ballot no more than twice. An error in recording or printing a paper ballot copy not caused by the voter shall not be counted as a spoiled ballot.

2.3.3.3.1 Before the voter causes a third and final paper record to be printed, the voter shall be presented with a warning notice that the selections made on screen will be final and the voter will see a printout of their vote, but will not be given additional opportunities to change their vote after the ballot is cast.

2.3.4 Accessibility

2.3.4.1 Alternative Languages: The AVVPAT-W shall be capable of producing an image in all alternative languages for which the DRE is certified.

2.3.4.2 Each paper ballot copy shall be printed in the language in which the voter casts his or her ballot on the DRE.

2.4 Ballot Viewer

2.4.1 Security: The ballot viewer shall allow the viewer to inspect the ballot image copy without physically handling the ballot copy and shall be physically secure from access.

2.4.2 Readability: The ballot viewer shall provide adequate visual space to allow the voter to privately and independently inspect the ballot image copy. A paper ballot copy shall be readable from the same position and posture used for voting.

2.4.2.1 Covering: Any protective covering intended to be transparent shall be in such condition that it can be made transparent by ordinary cleaning of its exposed surface.

2.4.3 Accessibility: The ballot viewer or DRE shall include whatever additional devices are necessary to allow blind and visually impaired individuals to review the information printed on the paper ballot copy, as required by law.

2.4.3.1 This may include but is not limited to an audio component.

2.4.3.2 If an audio component is used, it must accurately relay the information printed on the paper ballot copy to the voter.

2.4.3.3 Any software or firmware used as an electronic method to decode or interpret the information provided to the voter, and to verify that the information provided to the voter is the same information that is printed on the paper ballot copy, shall be published and freely available for download on the Secretary of State's website.

2.5 Ballot Storage Unit

2.5.1 Security: The ballot storage unit and the ballots copies contained within shall be held to the same standards as in paper ballot systems. This includes, but is not limited to, being tamper-proof, being able to maintain and track chain of custody and post-election storage.

2.5.2 Secrecy: The system shall be designed to ensure secrecy of votes so that it is not possible to determine which voter cast which ballot.

2.5.3 Capacity: The combined capacity of all the ballot storage units in a precinct must be enough to accommodate all voters using the DRE machines within the precinct.

2.6 Reader: The AVVPAT-R used to read, interpret and summarize the information contained on the paper ballot copy shall conform to pre-existing California standards for vote tabulation hardware and software.

3. Procedure Standards

3.1 Update: Testing, pre-election, election and post-election procedures shall be updated to reflect the use of the AVVPAT. These updates include but are not limited to:

3.1.1 Testing and Certification Procedures

3.1.1.1 Testing: The system shall conform to testing standards adopted by the state. Additional required testing shall include, but not be limited to, durability and longevity testing for the AVVPAT-W.

3.1.1.2 Certification: The AVVPAT system must be certified for use by the State of California in conjunction with the rest of the voting system with which it is intended to be used.

3.1.2 Pre-election Procedures: The AVVPAT-R and AVVPAT-W components must be integrated into existing local logic and accuracy testing requirements.

3.1.3 Election Procedures

3.1.3.1 Malfunctions

3.1.3.1.1 The vendor must include procedures for how to address malfunctions including but not limited to misreporting votes, paper jams, low-ink and misfeeds.

3.1.3.1.2 The vendor must include procedures for how to address recovery of votes in case of malfunction to assure a voters ballot is properly cast

3.1.4 Post Election Procedures: Procedures must be adjusted to reflect the use of the paper ballot copies in the required 1% manual recount, any full manual recount, or any electronic recount of the paper ballot copies.

3.2 Retention: The voter verified paper ballot copy shall be retained by the elections official for the same period as mandated for paper ballots for that election.